

Health Technologies

Business Opportunities — Technologies

Bioreactor for production of engineered tissue

Background

The second generation Rotating Wall Vessel (RWV) bioreactor differs from existing technology in that it yields marked improvements in tissue structure and function through faithful reproduction of the loading conditions to which bone and cartilage cells are subjected during normal everyday physical activities. It could form the basis of a continuous automated process of tissue production, from initial seeding through to final product.

Key Benefits

- Allows one or more patient specific constructs to be cultured under dynamic loading conditions that mimic the physiological synovial environment.
- Improved structural/biochemical properties via increased cell viability, collagen and GAG production owing to enhanced mass transport of culture medium through the construct.
- Facilitates monitoring of the metabolic status and permeability of the constructs by means of appropriate transducers, instrumentation etc.

Markets and Applications

The major commercial application of the technology is to address the demands of the biologics market. The US cartilage repair market alone is expected to achieve a value of ca. \$58M in 2014, with a further \$20+M in Europe. Growth will be further fueled towards the end of the decade as new technologies impact the market.

Licensing and Development

Contact is welcomed from organisations interested in developing, licensing or exploiting this technology. The University of Strathclyde has secured patent rights for this technology.

Please contact rkes@strath.ac.uk.

